



PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference insert	FOR FURTHER ACTION		See Form PCT/PEA416
International application No. PCT/NL2004/000724	International filing date (day/month/year) 15.10.2004	Priority date (day/month/year) 27.10.2003	
International Patent Classification (IPC) or national classification and IPC F16B5/01			
Applicant DE GROOT, Martin Theodoor			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 1 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in Item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 18.08.2005		Date of completion of this report 16.12.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 851 epo nl Fax: +31 70 340 - 3016		Authorized Officer Van Nieuwenhuize, O Telephone No. +31 70 340-3435 	

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/NL2004/000724

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-10 as originally filed

Claims, Numbers

2, 8-11 as originally filed

1, 4-6 received on 18.08.2005 with letter of 16.08.2005

Drawings, Sheets

1/4-4/4 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☒ the claims, Nos. 3,7
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1,2,4-6,8-11
	No: Claims	
Inventive step (IS)	Yes: Claims	1,2,4-6,8-11
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1,2,4-6,8-11
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**INTERNATIONAL PRELIMINARY
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(SEPARATE SHEET)**

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Re Item V.

1. Reference is made to the following documents:

D1: US-A-5536344
D2: JP-A-54101878
D3: DE-U-20105550
D4: DE-A-19610636

2. The following is stated under reference to Item VIII of this written opinion.

- 2.1 Document D1, cf. claim 7 in conjunction with column 3, lines 5 - 11, discloses a method for arranging a thermoplastic insert unit (2) comprising a body (8) and a flange in a thermoplastic sandwich product (4) having at least one substantially planar section (14), which sandwich product (4) comprises a layer of a core material (18) and at least one covering layer formed from a fibre reinforced thermoplastic (cf. col. 3, lines 6, 7), the method comprising the steps of forming a hole in the covering layer (14) of the thermoplastic sandwich product (4), with core material (18) being removed; placing the plastic insert unit (2) in the hole; positioning the insert unit in an apparatus; applying energy and pressure, so that heat is generated between the plastic insert unit (2) and the covering layer (14) of the thermoplastic sandwich product; and fixing the insert unit through cooling after sufficient heat has been supplied to allow fusion (cf. figure 6) between the plastic insert unit and the covering layer of the thermoplastic sandwich product.

The subject-matter of claim 1 differs therefrom in that the core material is a thermoplastic foam, the positioning is between an ultrasonic horn and an anvil and the energy is applied ultrasonically.

Therefore the subject-matter of claim 1 is novel and claim 1 meets the requirements

of Article 33(2) PCT.

The objective problem underlying claim 1 appears to lie in improving local structural integrity of the panel, cf. page 2, paragraph 5 of the letter of reply.

Although the combination of features consisting of a thermoplastic core material (7, 21), positioning an insert (6, 13) between an ultrasonic horn (3) and an anvil (8), whereby energy is applied ultrasonically, is as such known from document D2, cf. the Derwent abstract in conjunction with figures 1 - 3, a combination of the teachings of documents D1 and D2 would not lead to the subject-matter of claim 1, since such a combination would lack the feature of welding of thermoplastic foam and upstanding walls of the body of the insert unit. Neither D2 nor any of the other cited documents provides the skilled man with a hint in order to come to the solution provided by claim 1 once being confronted with the objective underlying problem.

Therefore the subject-matter of claim 1 involves an inventive step and claim 1 meets the requirements of Article 33(3) PCT.

- 2.2 It is to be noted, that although D4 as such teaches the combined features of a foam material, positioning an insert between an ultrasonic horn and ultrasonically applying energy, this document neither would be considered for improving local structural integrity of a panel, because there is no fusion between the insert and a covering layer with a hole therein described.
3. Dependent claims 2, 4 - 6 and 8 - 11 also meet the requirements of Articles 33(2) and (3) PCT.
4. Claims 1, 2, 4 - 6, 8 - 11 meet the requirements of Article 33(4) PCT.

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Re Item VII.

1. The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
2. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in prior art documents D2, D3 and D4 is not mentioned in the description, nor are these documents identified therein.

Re Item VIII.

1. The description is not in conformity with the claims as required by Rule 5.1(a)(iii) PCT, thereby formally causing a lack of support of the present claims contrary to the requirements of Article 6 PCT.

IAP12 Rec'd PCT/PTO 27 APR 2006

Ref. Applicant: insert-16-08-2005

- International patent application WO2005/045263 (PCT/NL2004/000724) in the name of
De Groot, Driebergen

Annex to letter dated 16 August, 2005

EPO - DG 1

AMENDED CLAIMS

18. 08. 2005

1. Method for arranging a thermoplastic insert unit comprising a body and a flange in a thermoplastic sandwich product having at least one substantially planar section, which sandwich product comprises a layer of a thermoplastic foam core material and at least one covering layer formed from a fibre-reinforced thermoplastic, the method comprising the steps of forming a hole in the covering layer of the thermoplastic sandwich product, with core material being removed; placing the plastic insert unit in the hole; positioning the insert unit between a horn and an anvil of an ultrasonic apparatus; applying ultrasonic energy and pressure, so that heat is generated between the plastic insert unit and the covering layer of the thermoplastic sandwich product; fixing the insert unit through cooling after sufficient heat has been supplied to allow fusion between the plastic insert unit and the covering layer of the thermoplastic sandwich product. (42)

Cancel claims 3 and 7.

4. Method according to one of the preceding claims, in which the dimensions of the hole are equal to the dimensions of the body of the insert unit.
5. Method according to one of the preceding claims, in which the body of the plastic insert unit is matched to the thickness of the sandwich product such that application of ultrasonic energy and pressure effects simultaneous fusion of the underside of the plastic insert unit to the top side of the bottom covering layer and the underside of the flange of the insert unit to the top side of the top covering layer of the thermoplastic sandwich product.
6. Method according to one of the preceding claims, in which the cross section of the hole is divided into at least two parts in the top covering layer.